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Date: 5/10/03

09/763,247 OPT 27-33

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant	: Carroll, et al
Serial No.	: 09/763,247
For	: WAVE ENERGY CONVERTERS UTILIZING PRESSURE DIFFERENCES
Filed	: 10/15/01
Examiner	: Gonzalez, J.C.
Art Unit	: 2843

AMENDMENT

Hon. Commissioner of Patents and Trademarks
Washington, D. C. 20231

Sir:

In response to the office action mailed 2/10/03, kindly amend the claims of the application as follows:

Cancel Claims 8 and 9 and add the following new Claims 10-19.

--10. An apparatus for capturing energy from surface waves on a body of water, the apparatus comprising, when in use:

a vertically extending submerged member having upper and lower ends, one of said ends being closed for preventing water flow through the member; each of said ends experiencing respective water pressures which vary as a function of overpassing surface waves; said member having a vertical length such that the amplitudes of the water pressure variations at the lower end of said member are smaller than the amplitudes of simultaneous water pressure variations at the upper end of said member for resulting in varying water pressure differentials between said ends which drive said member into vertical oscillations;

said member being mounted such that said vertical oscillations result solely from said varying water pressure differentials; and

an energy converter connected to said member for converting movements of said member into useful energy.

11. An apparatus according to Claim 10 wherein said member is movably secured to a stationary support providing the sole structural support for said member.

12. An apparatus according to Claim 11 wherein said stationary support is secured to the floor of the body of water.

13. An apparatus according to Claim 12 wherein said stationary support includes a submerged and stationary float rigidly anchored to the water body floor, said member being movably secured to said float.

14. An apparatus according to Claim 13 wherein said member is hollow, has an open bottom end, and is disposed in surrounding relation with said float, and said float is anchored to said floor by a cable extending downwardly from said float through the open, bottom end of said member.

15. An apparatus according to Claim 10 including means for disposing said member at a depth, relative to a mean water level of said body of water, such that variations in water pressure caused by overpassing waves at said member upper end are at least 90% larger than the water pressure variations caused by said waves at said member lower end.

16. An apparatus according to Claim 10 wherein said member upper end is closed, and including a mast supported on said float and extending, in water tight fit, through said cylinder upper end to and beyond the water surface.

17. An apparatus according to Claim 10 wherein said member is hollow, and said closed end includes a normally closed relief valve designed to open in response to pressure differentials on opposite sides of said closed end in excess of a preselected pressure differential.

18. A method of capturing energy from surface waves on a body of water comprising:

submerging an elongated member within said water body in vertical orientation with a closed end of said member up;

mechanically supporting said member in vertical movable relation with, and solely by, a stationary support such that the sole mechanism for transferring energy from said surface waves to said member comprises varying water pressure differences between opposite ends of said member.

19. A method according to Claim 18 including disposing said member within said body of water in relation to the mean water level of said body such that variations in water pressure, caused by overpassing waves, at the top of said member are at least 90% larger than the water pressure variations caused by said waves at the bottom of said member.